



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

Jeffrey Gabbay

Application No.: 10/757,786

Filed: January 13, 2004

For: DISPOSABLE DIAPER HAVING  
COPPER COMPOUNDS FOR  
COMBATING DIAPER RASH  
(as amended)

Customer No.: 20350

Confirmation No. 5452

Examiner: Michael G. Bogart

Technology Center/Art Unit: 3761

DECLARATION  
UNDER  
37 CFR 1.132

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

I, Jeffrey Gabbay, declare as follows:

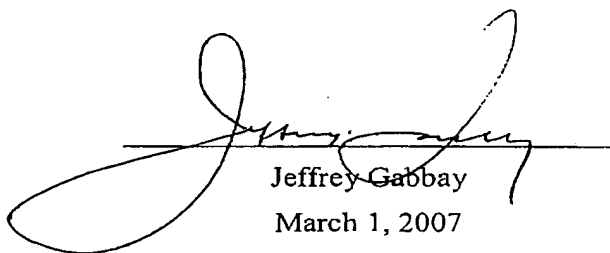
1. I am the inventor of the invention described and claimed in the above-identified patent application. I am also President of, and a stockholder in, Cupron Inc., the assignee of the above-referenced application.

2. I am trained as a textile engineer with a chemistry background. My education includes a formal background and 30 years of laboratory and production experience. I have been employed in the textile industry since 1969. I have acted as Chief Advisor to the Israel Defense Force for all matters involved in military textiles (e.g., fire proof fabrics, radar scattering fabrics, bullet proof fabrics, etc.). Since 1994 I have been involved in a project involving biologically active fabrics for protection against pathogenic microbes. The project concerning biologically active fabrics is being applied to such issues as the reduction of nosocomial infections, wound healing, and bacterial, fungal, and viral elimination.

3. Certain forms of copper have a characteristic color. For example, copper hydroxide is light blue.

4. The color characteristic of cupric oxide is black (see the Material Safety Data Sheet, attached as Exhibit 1). The color characteristic of cuprous oxide is red (see the attached Material Safety Data Sheet (Exhibit 2)). A mixture of cupric oxide and cuprous oxide has a dark brown appearance. I am not aware of other forms of copper having a dark brown appearance.

5. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Jeffrey Gabbay  
March 1, 2007



## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Cupric oxide

**PRODUCT NUMBER:** 2141

**CHEMICAL NAME:** Cupric oxide

**DATE PREPARED:** 06-Jan-06

**MANUFACTURER:**

The Shepherd Chemical Company

4900 Beech Street

Cincinnati, Ohio 45212

(513)-731-1110 (voice), (513)-731-1532 (fax)

**EMERGENCY TELEPHONE NO.** 1-800-424-9300 CHEMTREC

### SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

<u>CHEMICAL INGREDIENT</u>	<u>C.A.S. NUMBER</u>	<u>% BY WEIGHT</u>	<u>% METAL</u>
Cupric oxide	1317-38-0	100	80 Cu

### SECTION 3 - HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

**APPEARANCE:** Black powder

**ODOR:** No odor

**WARNING!** CAUSES EYE IRRITATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. AVOID BREATHING DUST. WASH THOROUGHLY AFTER HANDLING. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION.

#### POTENTIAL HEALTH EFFECTS, TARGET ORGAN EFFECTS (ACUTE AND CHRONIC)

This product causes eye irritation and may cause skin and upper respiratory tract irritation. Copper dusts may produce symptoms similar to the common cold with chills and stuffiness of the head. Long term overexposure to copper dusts may cause skin irritation or discoloration of the skin and hair. Eye contact may produce conjunctivitis, corneal ulceration and turbidity and palpebral edema.

**CARCINOGENICITY:** Not applicable

### SECTION 4 - FIRST AID MEASURES

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Wash skin with soap and water.

### SECTION 5 - FIRE FIGHTING MEASURES

**FLASHPOINT/METHOD:** N/A  
**FLAMMABLE LIMITS:** LEL: N/A UEL: N/A  
**EXTINGUISHING MEDIA:** Water  
**SPECIAL FIREFIGHTING PROCEDURES:** Use Self-Contained Breathing-Apparatus.  
**FIRE AND EXPLOSION HAZARD:**  
N/A

#### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

Ventilate area of spill. Avoid generating dust. Collect material into appropriate containers for reuse or disposal. Material may also be flushed with water to a wastewater treatment system.

#### **SECTION 7- HANDLING AND STORAGE**

Avoid contact with eyes, skin and clothing. Avoid breathing dust. Wash thoroughly after handling. Store in closed containers. Avoid generating dust.

#### **SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**RESPIRATORY PROTECTION:** Use NIOSH/MSHA approved respirators if OSHA PEL is exceeded.  
**SKIN PROTECTION:** Use impervious glove and body-covering clothing.  
**EYE PROTECTION:** Use side-shielded safety glasses or goggles.  
**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation.  
**EXPOSURE GUIDELINES:**

<b><u>CHEMICAL INGREDIENT</u></b>	<b><u>OSHA PEL (mg/M3)</u></b>	<b><u>ACGIH TLV (mg/M3)</u></b>
Cupric oxide	1.0 Cu	1.0 Cu

#### **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE:** Black powder  
**ODOR:** No odor  
**BOILING POINT:** N/A  
**VAPOR PRESSURE (mm HG):** N/A  
**VAPOR DENSITY (Air = 1):** N/A  
**SOLUBILITY IN WATER:** N/A  
**SPECIFIC GRAVITY / DENSITY:** 6.32  
**FREEZING POINT:** N/A  
**pH:** N/A  
**EVAPORATION RATE:** N/A

#### **SECTION 10 - STABILITY AND REACTIVITY**

**STABILITY:** This product is stable. Hazardous polymerization will not occur.  
**INCOMPATIBILITY:** N/A  
**HAZARDOUS DECOMPOSITION BY PRODUCTS:**  
N/A

#### **SECTION 11- TOXICOLOGICAL INFORMATION**

None found for this product.

#### **SECTION 12- ECOLOGICAL INFORMATION**

Not available

**SECTION 13 - DISPOSAL CONSIDERATION**

Dispose in closed containers, at an approved landfill, in accordance with local, state and federal regulations. Material may also be flushed with water to a wastewater treatment system.

**SECTION 14 - TRANSPORT INFORMATION**

This product is not regulated for transportation.

**SECTION 15 - REGULATORY INFORMATION****OSHA HAZARD COMMUNICATION STANDARD:**

Hazardous due to target organ effects (See Section 3)

**CERCLA/SUPERFUND:**

N/A

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):**

Section 311/312 Hazard Categories: Acute Health Hazard

**Section 313- This product contains the following substances subject to 313 reporting:**

Copper compounds 100%

**TOXIC SUBSTANCES CONTROL ACT (TSCA):**

All components of this product are on the TSCA Inventory unless otherwise noted in Section 2.

**INTERNATIONAL REGULATIONS:**

Available upon request

**SECTION 16 - OTHER INFORMATION****REFERENCES:**

Occupational Health Guidelines for Chemical Hazards, JAN. 1981, NIOSH/OSHA

**HMIS RATING:**

Health - 2

Flammability - 0

Reactivity - 0

Personal Protection - E

**DISCLAIMER:**

ALTHOUGH THE INFORMATION AND RECOMMENDATIONS SET FORTH HEREIN (HEREINAFTER "INFORMATION") ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE CORRECT AS OF THE DATE HEREOF, THE SHEPHERD CHEMICAL COMPANY MAKES NO REPRESENTATIONS AS TO THE COMPLETENESS OR ACCURACY THEREOF. INFORMATION IS SUPPLIED UPON THE CONDITION THAT THE PERSONS RECEIVING SAME WILL MAKE THEIR OWN DETERMINATION AS TO ITS SUITABILITY FOR THEIR PURPOSES PRIOR TO USE. IN NO EVENT WILL THE SHEPHERD CHEMICAL COMPANY BE RESPONSIBLE FOR DAMAGES OF ANY NATURE WHATSOEVER RESULTING FROM THE USE OF OR RELIANCE UPON INFORMATION. NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESSED OR IMPLIED, OR MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OF ANY OTHER NATURE ARE MADE HEREUNDER WITH RESPECT TO INFORMATION OR THE PRODUCT TO WHICH INFORMATION REFERS.



## MATERIAL SAFETY DATA SHEET

### SECTION 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Copper oxide

**PRODUCT NUMBER:** LB2270-2

**CHEMICAL NAME:** Cuprous oxide

**DATE PREPARED:** 06-Jan-06

**MANUFACTURER:**

The Shepherd Chemical Company

4900 Beech Street

Cincinnati, Ohio 45212

(513)-731-1110 (voice), (513)-731-1532 (fax)

EMERGENCY TELEPHONE NO. 1-800-424-9300 CHEMTREC

### SECTION 2 - COMPOSITION / INFORMATION ON INGREDIENTS

<u>CHEMICAL INGREDIENT</u>	<u>C.A.S. NUMBER</u>	<u>% BY WEIGHT</u>	<u>% METAL</u>
Cuprous oxide	1317-39-1	100	89 Cu

### SECTION 3 - HAZARD IDENTIFICATION

#### EMERGENCY OVERVIEW

**APPEARANCE:** Red powder

**ODOR:** No odor

WARNING! CAUSES EYE IRRITATION. AVOID CONTACT WITH EYES, SKIN AND CLOTHING. AVOID BREATHING DUST. WASH THOROUGHLY AFTER HANDLING. KEEP CONTAINER CLOSED. USE WITH ADEQUATE VENTILATION.

#### POTENTIAL HEALTH EFFECTS, TARGET ORGAN EFFECTS (ACUTE AND CHRONIC)

This product causes eye irritation and may cause skin and upper respiratory tract irritation. Copper dusts may produce symptoms similar to the common cold with chills and stuffiness of the head. Long term overexposure to copper dusts may cause skin irritation or discoloration of the skin and hair. Eye contact may produce conjunctivitis, corneal ulceration and turbidity and palpebral edema.

**CARCINOGENICITY:** Not applicable

### SECTION 4 - FIRST AID MEASURES

If inhaled, remove to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen. Call a physician. If swallowed, induce vomiting immediately by giving two glasses of water and sticking finger down throat. Call a physician. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. Wash skin with soap and water.

### SECTION 5 - FIRE FIGHTING MEASURES

**FLASHPOINT/METHOD:** N/A  
**FLAMMABLE LIMITS:** LEL: N/A UEL: N/A  
**EXTINGUISHING MEDIA:** Water  
**SPECIAL FIREFIGHTING PROCEDURES:** Use Self-Contained Breathing-Apparatus.  
**FIRE AND EXPLOSION HAZARD:**  
N/A

#### **SECTION 6 - ACCIDENTAL RELEASE MEASURES**

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**EYE PROTECTION:** Use side-shielded safety glasses or goggles.  
**ENGINEERING CONTROLS:** Provide general and/or local exhaust ventilation.  
**EXPOSURE GUIDELINES:**

<b><u>CHEMICAL INGREDIENT</u></b>	<b><u>OSHA PEL (mg/M3)</u></b>	<b><u>ACGIH TLV (mg/M3)</u></b>
Cuprous oxide	1.0 Cu	1.0 Cu

#### **SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES**

**APPEARANCE:** Red powder  
**ODOR:** No odor  
**BOILING POINT:** N/A  
**VAPOR PRESSURE (mm HG):** N/A  
**VAPOR DENSITY (Air = 1):** N/A  
**SOLUBILITY IN WATER:** N/A  
**SPECIFIC GRAVITY / DENSITY:** 6.0  
**FREEZING POINT:** N/A  
**pH:** N/A  
**EVAPORATION RATE:** N/A

#### **SECTION 10 - STABILITY AND REACTIVITY**

**STABILITY:** This product is stable. Hazardous polymerization will not occur.  
**INCOMPATIBILITY:** N/A  
**HAZARDOUS DECOMPOSITION BY PRODUCTS:**  
N/A

#### **SECTION 11- TOXICOLOGICAL INFORMATION**

oral rat LD50: 470 mg/kg

#### **SECTION 12- ECOLOGICAL INFORMATION**

Not available

### **SECTION 13 - DISPOSAL CONSIDERATION**

Dispose in closed containers, at an approved landfill, in accordance with local, state and federal regulations. Material may also be flushed with water to a wastewater treatment system.

### **SECTION 14 - TRANSPORT INFORMATION**

This product is not regulated for transportation.

### **SECTION 15 - REGULATORY INFORMATION**

#### **OSHA HAZARD COMMUNICATION STANDARD:**

Hazardous due to target organ effects (See Section 3)

#### **CERCLA/SUPERFUND:**

N/A

#### **SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):**

Section 311/312 Hazard Categories: Acute Health Hazard

#### **Section 313- This product contains the following substances subject to 313 reporting:**

Copper compounds 100%

#### **TOXIC SUBSTANCES CONTROL ACT (TSCA):**

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#### **INTERNATIONAL REGULATIONS:**

Available upon request

### **SECTION 16 - OTHER INFORMATION**

#### **REFERENCES:**

Occupational Health Guidelines for Chemical Hazards, JAN. 1981, NIOSH/OSHA

#### **HMIS RATING:**

Health - 2

Flammability - 0

Reactivity - 0

Personal Protection - E

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